

WHAT IS CLAIMED IS:

Sub B1
1. An external display device of a refrigerator comprising:

5 a display unit mounted on an outer case of the refrigerator, the display unit decoding a display control signal applied thereto, thereby executing a display operation; control means for converting the display control signal, adapted to control the display operation of the display unit, into serial data, and outputting the converted display control signal; and

10 a data signal line adapted to transmit data between the display unit and the control means in a serial manner.

15 2. The external display device in accordance with Claim 1, wherein:

the display unit converts a plurality of key input signals into serial data and outputs the serial data to the control means; and

20 the control means decodes the key input signals and executes a control based on the decoded key input signals.

3. An external display device of a refrigerator comprising:

25 a display unit mounted on an outer case of the

refrigerator, the display unit recognizing a key input and converting the recognized key input into serial data, while decoding a display control signal indicative of an operating state of the refrigerator and executing a display operation based on the decoded signal;

control means for converting the display control signal into serial data and outputting the converted display control signal, while decoding a key signal received from the display unit and executing a control based on the decoded key signal; and

data signal line means adapted to transmit data between the display unit and the control means in a serial manner.

4. The external display device in accordance with Claim 3, wherein the display unit comprises auxiliary control means for receiving a command from the control means, thereby executing an intermediate control until the operating state of the refrigerator is displayed.

5. The external display device in accordance with Claim 3 ~~or 4~~, wherein the data signal line means comprises a single data signal line adapted to carry out a bi-directional data transmission/reception in an asynchronous manner.

6. The external display device in accordance with Claim

lines each adapted to transmit data in a single direction in sync with the clock signal.

Sub B45
11. A method for controlling an external display device of a refrigerator adapted to display an operating state of the refrigerator while enabling a key selection for controlling the refrigerator, comprising the steps of:

10 determining whether a right of data transmission is assigned to the external display device or to a control unit of the refrigerator;

26E02T 15048630
15 converting, into serial data, a signal indicative of an operation state of the refrigerator when the data transmission right is assigned to the control unit while converting, into serial data, a key input signal when the data transmission right is assigned to the external display device, and outputting the resultant data; and

inputting the output data, decoding the data, and executing a control based on the decoded data.

20 12. A method for controlling an external display device, comprising the steps of:

determining whether or not there is data to be transmitted;

25 checking whether or not a right of data transmission is assigned;

if it is determined that there is data to be transmitted,
transmitting the data when there is a data transmission right
assigned, while executing a procedure for requesting the data
transmission right when there is no data transmission right;

5

determining whether or not there is data received; and

if it is determined that there is data received,
continuously executing the current transmission mode when
there is a data transmission right, while processing the
received data when there is no data transmission right.

add A1

add B3

0898405-120397
26E02T" 65048680